The Journal

OF

The Kansas Medical Society

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Volume IV **November 1, 1904** **Number 11**

EXAMINATION QUESTIONS.

The following questions were used at the state licensing examination on October 11. Thirty-three tried and nine failed. We are indebted to Dr. Johnston for the report.

ANATOMY—D. P. COOK, M. D.

1. Give the origin of the common iliac artery. 2. Name the muscles between the hip and knee. 3. Give the anatomy of the kidneys. 4. Describe the fetal circulation. 5. Give the distribution of the jugular veins. 6. Describe the origin and insertion of the pectoralis minor muscle; also the psoas magnus and psoas parvus. 7. Describe the shoulder joint, giving articular surfaces, ligaments, etc. 8. Name all of the bones of the hand and wrist. 9. What veins have no valves, and why? 10. How many bones in the human anatomy? And why do anatomists differ as to the number?

CHEMISTRY—G. F. JOHNSTON, M. D.

1. What is galvanism? 2. How can it be demonstrated that hydrogen is lighter than air? 3. What is analysis and what synthesis? 4. What is the effect of inhaling air rich with ozone on the respiratory organs? 5. In what manner does arsenic prove poisonous? 6. How does CO act as a poison? 7. What is the action of KOH on the tissues? 8. What is the antidote for acute poisoning by $HgCl_2$?

9. What is the reaction of blood during gout? 10. What is Trommer's test for sugar in urine?

OBSTRETRICS—O. P. LEWIS, M. D.

1. Give diagnosis and treatment of placenta previa. 2. State principal causes of puerperal infection. 3. State causes and treatment of afterpains. 4. Is abortion ever justifiable? If so, when? 5. Give probable cause and treatment of mammitis. 6. What is amenorrhea? What is menorrhagia? Give treatment. 8. What is tubal pregnancy? 9. By what method would you treat a complete laceration of the perineum? 10. Define metritis and give treatment.

PATHOLOGY—T. E. RAINES, M. D.

1. Give the pathological anatomy of herpes zoster. 2. Describe the pathological changes in Graves's disease. 3. Describe the pathological changes in Meniere's disease. 4. Describe the chtnges in acute peritonitis. 5. Describe in detail the changes that take place in typhoid ulcer. 6. Describe pathological changes in acute pulmonary consumption. 7. Describe morbid changes in chronic cystitis. 8. Describe morbid anatomy in case of advanced richitis. 9. Describe chanffes in purpurea hemorrhagica. 10. Describe changes that may take place in the heart during an attack of acute articular rheumatism.

BACTERIOLOGY—W. F. FLACK, M. D.

1. What are bacteria and how do they multiply, and what is their shape? 2. What is essental to the life of bacteria? 3. What are the most favorable media for the development of bacteria? 4. What is sterilization and what kinds have we? What are antiseptics, and name several? 5. Define immunity. 6. Name the various forms of culture media used. 8. Give the names of the bacillus of typhoid fever, gonorrhea and diphtheria. 9. Describe the bacillus anthrax. 10. What disease do we find micrococcus lanceolatus?

PHYSIOLOGY—F. P. HATFIELD, M. D.

1. Give the composition of human blood in normal condition. 2. Describe the fetal circulation. 3. Give the entire process of digestion, beginning with mastication (*a*) of albuminous food; (*b*) of fatty food; (*c*) of starchy food. 4. Name all the veins which have no valves and give reason why. 5. Describe the sympathetic nervous system; what are its functions? 6. What centers are located in the medulla oblongata? 7. Name all the ductless glands of the body. Do they form secretions? 8. Describe the mechanism and circulation of the blood through the heart and explain the diastolic and systolic action. 9. Give process by which nourishment is appropriated for repair. 10. Describe the entire process of deglutition.

(Continued in December issue.)

A NEW METHOD OF ISOLATING MICRO-ORGANISMS.

M. A. BARBER.

Department of Bacteriology, University of Kansas.

The importance to bacteriology of precise methods of making pure cultures is well illustrated by the history of the researches on anthrax. In 1863 Davaine found that blood of a diseased animal containing the small rods would, when inoculated into another animal, cause the disease anthrax; and he was convinced that the rods, which he recognized as bacteria, were the true cause of the disease. But the objection was made that other substances were inoculated at the same time as the bacteria, and that one could not be sure that it was not some other substance with which the bacteria were merely associated which was the real cause. But when Koch in 1876 isolated the rods by means of cultures on gelatine, cultivated then for many generations outside of the body and showed that generations of the bacteria far removed from the original drop of blood were capable, when inoculated, of causing anthrax, the proof was complete. So in all investigations regarding the relation of micro-organisms to disease, fermentation, or any change in organic material, it is of the greatest importance to secure pure cultures of the organism experimented with; for in ascertaining which of the various antecedents of the effect is the necessary one—the cause—it is often essential to try each one of them separately.

One of the first methods of purifying cultures was that employed by Pasteur in his researches on beer. This method, a physiological one, consisted in adding to the mixed culture of yeast plants and bacteria substances such as sugar which favor the growth of yeast, and tartaric or other acids which retard the growth of bacteria. By successful changes of the selective medium and the employment of temperatures which least favor the growth of bacteria, he obtained cultures of yeast free from bacteria. However this method did not secure a pure culture of a single species of yeast plant. In 1878 Lister obtained pure cultures of the lactic bacteria by so diluting a drop of liquid containing the organisms that, according to his calculation, a single drop did not contain more than one individual. Then of a series of flasks of nutrient medium, each inoculated with a drop of the dilution, he concluded that the flasks showing growth contained the progeny of a single cell. But one

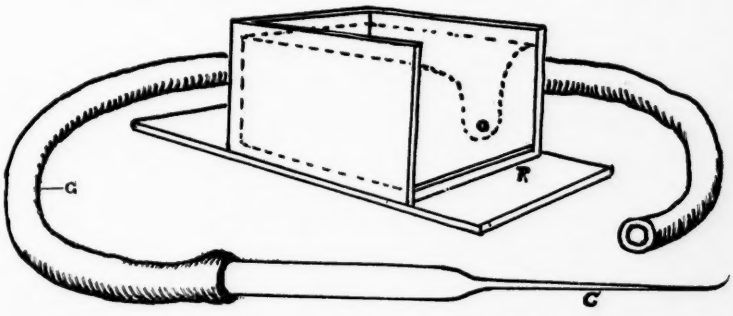
could not yet be certain that the cultures in these flasks came from one or more than one cell. So in 1882 Hansen devised an improvement on this method, and further, observing carefully his inoculated flasks, he considered only those cultures pure in which the growth began with a single speck in the bottom or on the sides of the flasks. This method, used in isolating yeasts, would not do for many kinds of bacteria, at all events not for the motile ones.

A very great advance was made when, in 1883, Koch published his improved method of isolating by gelatine plates. Organisms were diluted in gelatine in the liquified state. When colonies appeared in the gelatine subsequently solidified and spread on a sterilized plate, it was assumed that each colony came from an isolated cell. But one could not yet be absolutely sure that such was the case; for a colony might well start from two individuals of different species which were not separated during the dilution. To avoid this difficulty, Hansen, working in 1883 with brewing yeasts, made small gelatine plate cultures on the surface of large cover glasses. These were placed over moist cells and sealed. A single yeast cell, well separated from its neighbors, was selected and its development observed. By this method one could be absolutely sure that the colony obtained came from the development of a single cell, and therefore formed a pure culture.

A method has been devised by Lindner (described in his Mikroskopische Betriebskontrolle in den Gaerungsgewerben, 1901) by which isolations proceeding from single observed cells may be made in liquids. A proper dilution of the yeast plant is made in a medium and a series of small drops of this dilution are placed on a sterile cover glass by means of a sterile writing or drawing pen. The cover glass is then sealed over a moist cell and those droplets marked which contain but a single cell.

While the methods of Hansen and Lindner enable the investigator to obtain pure cultures of yeast from a single isolated cell, he is still more or less dependent on chance as to the character of the particular cell isolated. He would find it difficult by these methods to select and isolate a single varying cell occurring among hundreds of others. Besides these methods are at a disadvantage in working with bacteria, especially small or motile species. Lindner states that he has succeeded in isolating sarcina and lactic acid bacteria, but admits that his method is limited in the case of small or active forms. So, when the writer of this paper undertook some two years ago the investigation of the individual variations seen among bacteria and yeasts, it was necessary to devise some new method of

the selection and isolation of single cells. Such a method was worked out and a description of it is given here.



Three pieces of glass, cut from an ordinary slide, are cemented with Canada balsam to a common slide in such a way as to form a box open at the top and one end as shown in the accompanying figure. I have made these of various sizes, but have usually made them equal in height to the breadth of the slide, about 40 millimeters in length and 25 millimeters in width. The sides of this box are lined with ordinary filter paper indicated by the dotted line, and a piece may also be placed at the open end and cut in the form shown in the figure at o. A small glass rod may be cemented in at r to strengthen the apparatus. A large oblong cover glass, I usually use a size of 25 by 40 millimeters, carefully cleaned, is sterilized in the flame, placed on top of the box and secured there by vasaline previously placed on the edges of the box. By means of the platinum loop a drop of sterile nutrient medium is placed on the under surface near the center. Evaporation is prevented by previously wetting the filter. To this drop a small portion of the culture under investigation is added, the whole apparatus is placed on the stage of the microscope, fixed in a mechanical stage, and the cells in the hanging drop brought into focus. A pipette is then made by drawing out in the flame a piece of thin walled glass tube about 8 to 10 centimeters in length and 4 millimeters in diameter, in sueh a way that a portion of it, shown at *c*, is drawn out into a much finer tube with very thin walls. This finer tube is then further drawn out in a very narrow flame formed by a bunsen with a narrow aperture. In doing this the finer portion of the tube is held in forceps, and just at the moment of drawing, a turn is given the tube so that a curve is formed at the tip, as shown in the figure. The thicker end is then attached to a rubber tube *g* of a length of about 10 cen-

timeters, the free end of which is taken into the mouth of the experimenter. By touching the curved tip to a drop of sterile medium held in the platinum loop a portion of the tip is at once filled by capillarity.

The eye is placed at the microscope, and the glass tube, held in the right hand is introduced into the box and its tip brought into view. It is, of course, essential to avoid touching the tip of the tube to any portion of the apparatus not sterilized. The yeast or bacterial cell which it is desired to isolate is touched with the tip, and usually enters the pipette at once by capillarity. Withdrawing the pipette from the drop and holding it continually in view, the cover and the rest of the apparatus is moved, by means of the mechanical stage operated by the second finger and the thumb of the left hand, until the tip of the pipette is at a safe distance from the culture drop. It is then raised and brought into contact with the cover and a small portion of its contents expelled by gently blowing into the rubber tube. A row of tiny drops may thus be made, in one of which the desired cell is usually found. If this droplet contains other cells also it may be further diluted and a new selection made. This may be done without renewing the pipette by expelling from it at some other place on the cover the part of the liquid still containing cells taken from the original drop, and then using it as at first. I have frequently succeeded in isolating the cell desired without resorting to this further dilution, in working both with yeasts and bacteria; but for this it is usually necessary to start with a culture somewhat diluted, to make the droplets very small and to use a very fine pipette, sometimes with opening so small that it will not admit larger yeast cells.

When the isolations are made the cover glass is sealed with vaseline on a hollow slide or any of the moist cells ordinarially in use for hanging drops. It is usually advantageous to mark the droplet containing the isolated cell so that it may be easily found. This I ordinarily do by placing on top of the cover in the neighborhood of the droplet tiny dots or line of asphalt cement applied under the low power of the microscope by means of a fine glass rod. If the droplets are arranged in lines or in any regular order, they may be simply numbered and the marking dispensed with; but I have usually found it safer and more convenient to mark the position of the droplet by means of the black cement.

To be sure that the droplet contains but a single cell it may be examined after it is sealed in the hollow slide with a high power, even with an oil immersion lens. The droplets may be made so

small that they do not occupy but a fraction of the field under the high objective, so that a thorough search is easy. In obtaining pure culture, however, I generally take the precaution of observing the isolated cell for some hours after its isolation and note if any development takes place in any other part of the droplet. If it is thought that there is not enough medium to nourish the organism, more may be added after examination by mounting the cover on the box again and adding more liquid from a new sterile pipette.

No trouble is experienced from the running together of the droplets if there is a very slight amount of vasaline on the surface of the cover. The smallest possible amount placed on the cloth with which the cover is finally wiped is sufficient, and in sterilizing one should not heat the cover so much that the vasaline layer is burned off. Further only enough moisture should be introduced into the moist cell to insure a saturated atmosphere. I have found it best to simply breath into the hallow of the slide and to place the culture over it before the condensed moisture has had time to evaporate. Many hanging drops may be made on the same cover, and I have succeeded in keeping them separate for many weeks. Several of these cultures were packed in a trunk and carried to Europe without mixing the droplets. This is possible only with drops of small size.

Practically no trouble has been encountered on account of contamination. The whole process of isolation often takes but a few minutes, and in working on the under surface of the cover, one runs less risk than in making ordinary plates. The best proof of the freedom from danger of contamination of the method is that I have worked for many months with cultures of both bacteria and yeasts at the same table, and I practically never have my bacterial cultures contaminated with a yeast or my yeast with bacteria, though the media used are usually favorable for both.

I generally make selections under a two-thirds or a one-fourth objective with a one inch eye piece, though I have used higher powers successfully. After a little practice very little difficulty is experienced in holding the hand steady enough for this work, especially if it be steadied against the stage of the microscope or supported on a block. I have experimented with mechanical contrivances intended to replace the hand, but have not found them necessary. No great difficulty is met with in acquiring sufficient skill to use the method. Mr. Burrows, one of my students, succeeded in isolating spores of fungi after one hour's practice, and in isolating a yeast after

three hours, without having had any previous practice with the method.

When a growth has formed in the droplet, it may be transferred to a test tube directly by means of a long pipette, or by discharging the cells into a drop of medium held in the platinum loop. This drop is then easily transferred to a test tube. I have also transferred the single cell directly to the surface of agar.

It hardly comes within the scope of this paper to describe the results obtained in the selection of micro-organisms and these will be reserved for a separate article. Only enough will be given here to illustrate the uses to which the above described method may be put. In experiments with yeast plant, Saccharomyces amomalus, a different race has been obtained by isolating a single varying cell; and this new race cultivated on various media, has retained its peculiarities for a year. Similar results have been obtained with bacillus coli communis. One of the very long filaments found in small numbers in cultures of this bacterium was isolated and has given rise to a new form more filamentous than the type, and this variety has kept its new characteristics during over two month's cultivation on different nutrient media and solid. Like results have been obtained with the bacillus of typhoid fever. Staphylococcus pyogenes aureus has been isolated from pus without the use of plate or other cultures on solid media, and several other species of bacteria have likewise been isolated by means of the pipette alone. Cultures of amœbæ coming from a single isolated individual have been made and various fungi grown from single spores. Not very much has been attempted as yet in the way of isolating organisms which do not grow well on solid media, but experiments will be attempted in this direction. The experiments thus far made have been in the way of applying to microorganisms the methods in common use in the selection of higher plants and animals; and it is believed that this new method will aid materially in the development of this field of research.

DISPENSING DRUGS.*

H. L. CLARKE, M. D.,
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The physician and druggist as well as the manufacturing chemist are deeply interested in the office dispensing of drugs by the physician.

While my experience as a physician has been but brief, my dis-

*Read before Linn County Medical Society at its meeting held in Mound City on July 23, 1904.

pensing has been much briefer. Taught by preceptor and college to write prescriptions, I can only point to the more prominent parts of office dispensing in this short paper. Some of the given reasons may be much more potent under some circumstances while under others much less powerful.

I shall discuss this subject under the following heads: 1st, reliability; 2d, eligibility; 3d, substitution; 4th, accuracy and 5th, cost.

There are many firms who manufacture drugs but are not careful nor mindful of the proper and reliable standards in given preparations.

When a formula has been found beneficial as a remedy there is always some person or firm who desires to copy and receive credit, and also secure profit by under grading such preparation. The therapeutic value of a drug is determined by the results it produces when administered to a patient. While some preparations of drugs will detoriate under the best of care, it behooves us to know that we have a thoroughly standardized drug or preparation. We want drugs that are tested by the most efficient means and only those that in our own hands have proven their value as remedial agents.

We, as physicians, have no time to apply a chemical or a physiological test to any given drug or preparation at the bedside of a patient, so of necessity we must rely upon the integrity of the manufacturer. We must have and use drugs that will give results. I know of no better plan to secure this end than that of familiarity of drug and preparation.

This era of elegant pharmacy has practically solved the question of eligibly dispensing many of the bad tasting and nauseating drugs and medicines for the dispensing physician. The entire list of drugs has been carefully investigated by chemist and physician along this line and he who wishes to dispense his own medicines need have no fear of the preparations that are compounded behind the prescription case. He has the means in his reach to readily dispense as elegant preparation as the pharmacist.

The evil of substitution is the most insidious and diabolical fraud that is or can be perpetrated upon patient and physician. Perhaps this reaches too many of the manufacturers of drugs and chemicals as well as to the unscruplous pharmacist, I doubt if we have as much cause as physicians to charge the average druggist in the smaller towns and country sections as we do those in the larger cities, especially the "cut rate" firm with substitution. We have abundant reasons to avoid the "cut rate" firm, either wholesale or retail, who flatters his patrons with "something cheaper" as well as

"just as good." Many dealers in the small towns are imposed upon by the smooth salesman who tells a good story of his firms' line of drugs and thereby places in the druggist's stock inferior preparations. Most druggists have not the time to study the mode of preparation of many drugs and medicines used in their business, and are frequently deceived in regard to the superiority of some "new process" preparation. While many pharmacists do not intend to deceive it is not until the physician has failed to secure the expected results from the drug that the truth of substitution has been brought out.

Accuracy in dispensing given portions of a drug can no longer be a reason for not preparing one's own medicine at the office. The standardization of drugs, eligible preparations, late refined and accurate processes of making tablets and triturates have tended to make it safe and easy in dispensing.

While office dispensing will cause an increase in the investment of the physicians means, it carries with it no extra expense to patron. While each physician will have his own ideas as to the cost to himself and patient we will all at least concede a better understanding of the drugs we use.

What results may we expect? We many times find it necessary to conceal from patient the exact remedy used which a written prescription would reveal, and as this fact would be probably evil in its import, we can best avoid such results by our own dispensing. This brings a feeling of security to the physician as he knows the grade of medicine his patient is using. While many drugs accomplish a similar end, but by a different manner, we often desire that end by a certain route, consequently we use a selected drug that meets that end. When a deficient drug is dispensed upon our prescription the results are poor, the patient is dissatisfied and the physician's reputation injured. There is no fast and tight rule to be followed in this matter. Experience alone is a safe guide and we must not listen to the "siren's song" of many of the drug salesmen who visit us to sell their goods.

I believe that dispensing from our office, as much as possible, will secure prompt and better results, lessen the poly-pharmacy craze, give us a better knowledge of drugs in their actions, a keener sense of our responsibility and more definite and better results.

EVOLUTION.*

The Evolution of Man, Physical, Mental and Moral—Its Hindrances and Helps.

W. L. SCHENCK, A. M., M. D.
Topeka, Kansas.

(Continued from October Issue.)

The hypercritical tell us Infinite Wisdom would not have taken this long way up the ages, but with a stroke of omnipotence would have made all worlds perfect, and man endowed with all wisdom. Perhaps, God could have made a better earth and a better manhood. The gentle English Fisherman, as he wandered along the stream, where the wild berries grew, said to himself, "Doubtless God could have made a better berry than the strawberry, but doubtless God never did." So He might have spoken into existence a perfected earth, and made all living forms with their countless cells differentiated into organs, and into each and all, breathed the breath of life, and into man a spirit life, made not simply in his image, but possessed of all his fullness. For ages such was supposed to have been His plan. But science, like the colored deacon began to question, and when his preacher said "God made man out o' mud, and set him up agin de fence to dry;" the deacon cried "Hold on dar, parson, who made de fence?" And theologians have repeated the parson's reply, "Dar must be no unrevrent terrogations in de pews." They might put out Gallileo's eyes, but they could not stop the moving worlds.

Whether at the beginning there was one or many atoms of protoplasm, we know not, and so when animal life first appeared, we know not, whether there were many animal cells or a single monad. The lower the form of life, the more abundant its reproduction, seems a universal law, a compensation for its feebler protective powers. So we may rationally infer that the All-Wise produced many unicellular lives to contend with the environment of the early earth, and the obstacles to be met with in their long way up the ages. Countless oceans intervened between the first life and the production of the "cave-dweller," and ages between him and written history. But the evolution of manhood should be in direct proportion with its development. Not many hundred years have passed since

* Read before the annual meeting of The Kansas Medical Society, May, 1904.

Celt and Saxon were barbarians. Adam Bede tells us that humanity made greater progress during the last century than in all the preceding years. Tolstoi has said "Russia will quickly take her place among the highest civilizations." She may through the stimulus of their example advance rapidly, but all progress is evolutionary. Many believed the negro of our southern states, would, when given freedom and the elective franchise, quickly take his place as an American citizen. Booker T. Washington is a prophecy of whahe may become, as Job, Isaiah, Socrates, Christ, and other monumental souls were the prophets and stimulants of the human race. But barbarians for ages, and slaves for generations, slavery in many instances being more debasing than barbarism, progress in the negro must be evolutionary, and crossing races will not stimulate development—an incidental argument for separate race development.

Many believe that the slums of the old world that are being emptied on our shores will be Americanized as soon as planted on our soil, and naturalized. We may stimulate their evolution, but it will require all the strength of our civilization to prevent a backward wave.

As already stated, doubtless there were many primordial cells, which developing under different environment evolved all the varied growth of forest and orchard, vineyard and garden, clothing the earth with beauty, variety and vitality. And so man and all the higher forms of animal life, having been evolved, not from a single monad, but from germs as numerous as the spawn of the fish, so that tossed to all lands by earth's early convulsions, enough were preserved to develop all its present forms of life. All down the ages antiquarians and historians have sought to account for the races of man. Moses wrote that 1666 years after the creation of man the whole human family, save Noah and his household, were destroyed by one of the early deluges of our planet, and after the days of Nimrod, (three generations from Noah), when "The whole earth was of one language, and one speech," and before the time of Moses, less than a thousand years later, Egyptian, Ethopian, and various races had been differentiated. Moses was an inspired teacher of moral science, but of other sciences he spoke only the wisdom of his age. In his account of creation, Moses took the short cut, and had all things made as they now are in six days. Following his example, evolution may cut the Gordian knot of race creation, and man in America.

If the monads from which all the higher forms of life sprang

were many, and were borne to all lands by the convulsions that constantly changed the geography, and made the history, of the early earth, then, a monad could as readily have developed a sufficient number of cells in the gray matter of the brain, to correlate perceptions among the valleys of Hindostan, on the islands of the Indian ocean, in the tropic regions of Africa, on the rich soil of America, as among the mountains of Caucasia, and different environment might well account for Mongol, Malay, Negro, Indian and Caucasian, and for the difference in their development, and solve the problem of races among men. And this seems the only interpretation of the account given by the great Jewish historian, when he tells us Cain became a fugitive and a vagabond, and fled to the land of Nod, where inferentially, he found a wife. He further says that "The sons of God came unto the daughters of men, and they bare children, and the same became mighty men." The Jewish conception was Adam, Abraham, Isaac, Jacob set apart by their God for special purposes, or as we would express it in modern phrase, as great land marks in the evolution of the race.

When man became man, and began to think and reason, we may never know, but his history is the same among all races and in all lands. He was everywhere impressed with the fact that there was a power higher than himself. What he failed to comprehend he deified, and what he thought could injure, and he saw harm everywhere, he sought to placate with offerings and adulation. His gods were the sun that could burn, the lightnings that could strike, the ocean that could drown, and as in the Homeric gods, all the base as well as the nobler passions of man. Slowly he learned to adore an infinite Jehovah. Evolution was the great thought in creation; reconstruction and re-adjustment, its methods of progress. The atoms of every complex organism are constantly destroyed by its activities, returned to original elements, and eliminated from the body. Evolution demands their reproduction in more perfect form and force. When an organism has served its purpose, through processes of fermentation and oxidation, it is returned to dust. Thus nature prevents intoxication from within and from without, and provides for progress. Death and life are alike her handmaids. Nature gives the aesthetic taste that abhors the accumulations that constitute sewage. The return of organic matter to earth formed and renews its soil, thus clothing it with beauty, and providing for fruitful harvests, and stimulating progress. Why the beautiful in nature and art delights the eye, and uplifts the soul, we may not know, but we do know it is one of the sweet tones of His voice who

sits within "The gate beautiful," and ever whispers, "Come up higher."By His wonder working laws He provided for all the color and variety that baautifies the earth. As light is separated by the rain drops, painting the rainbow, so by the varied forms of cell life, the opening buds, the blooming flowers, the dying petals, the forming and fading leaves, the constant change of elemental matter and form, there is in every varying beauty throughout the whole earth. Color is one of God's methods of uplifting the soul of man. "All nature is holy ground and every bush afire with God." The uplift of humanity demands that all cities should abound in well kept public parks. Re-adjustment aud reconstruction are nature's method of progress. While no atom or force of earth is lost, everywhere there is orderly change and development.

Beholding more and more the beauty, the wisdom, the love, the perfection of God's laws, man has slowly ascended the scale of being, until he has become co-worker with Him, making the lightning his handmaid, and the upper ether his highway, reaching ever onward to a grander future, and until we reach His perfectness we need not weep for worlds to conquer.

"As we surpass our father's skill,
Our sons will shame our own,
A thousand things are hidden still,
And but a hundred known."

In medicine, as yet we only "Pay tithe of mint, and anise, and cumin, and have omitted the weightier matters of the law." We exhaust our energies in demonstrating the evils of unsanitary environment, in diagnosing pathogenic germs, in discussing auto-intoxication, and in learning how to cure disease,—all very important—but we neglect the evolution of stronger lives, capable of resisting the varied causes of disease. Some one has said: "If you are harsh, and unkind, cruel and unjust, you are injuring the delicate fibre that must be woven into the world's judgment role, as by every brave and cheerful effort, you are reforming, uplifting, renewing, inspiring hearts and souls you never knew." Much more, by transmitting with an improved heredity a microscopic atom of productive protoplasm, are you providing for the transmission of stronger, sweeter lives, greater moral courage, and a true insight into all that pertains to health, life and happiness.

HINDRANCES TO EVOLUTION. (Afternoon Paper.)

The eternal energy tends to elevate and uplift. "Man alone is vile." The nicotine of tobacco, the acroline of the cigarette, the co-

caine and morphine and alcohol of those who become uctinus to their action. Evil habits, vitiated appetites, debased passions all tend in different degrees, the generation of a race of viscious degenerates. If asked what has been the greatest hindrance to evolution, there would be such replies, as race problems, industrial explosions, population congestions, mal-education, etc., and a majority, might answer intemperance. Not long ago I heard a minister of Topeka say, "If I should ask the congregation what is the greatest thing in the world, most would answer love, I stand here to say that law is greater than loAe." Is the thing created greater than its creator?

Intemperance is the result of moral weakness and moral weakness springs from vitiated will power, hereditary or acquired, and will power depends largely upon the integrity of the cells through which it acts. Back of this debasement lies the body, through whose instrumentality, during the life that now is, are all spiritual activities. Mal-education may teach that intoxicants are stimulants and food, and the habit of using them with the hope of gaining inspiration, courage and strength, may lead to the common habit of dodging behind their anesthesia for relief from the varied ills of life, real or imaginary, weakening that vital element of the soul, the will, whose control lies in its proper use, and whose strength is developed by resisting evil, until there comes as rational sequents to the poor besotted dodger, a debased moral sense, a corroded conscience an erroneous correlation of impressions, through a degenerate organism, and hence erroneous conclusions, temporary insanity, tending to permanent forms and to imbecility with disease in various organs of the body and the differentiation of debased reproductive cells, a debasment that reaches forward forever. Thousands and thousands die of alcoholism and its degenerations, but fortunately for humanity it rarely develops except among the "four hundred" class, and booze vendors, early enough to affect descent. We have all inhaled the fragrance and enjoyed the beauty of flowers and wondered how nature could produce them out of the soil and the filth of the gutter and the sewer. So we have wondered how from our debased and debauched humanity there has been evolution or perhaps have complained that it has been as "slow as the ages." All evolutionary processes are governed by laws whose violation retards progress. On many lines there is now and always will be opportunity to help it forward by discovering the laws and the best means of enforcement, and on many lines philanthropists have done what they could. We will only discuss one hindrance, perhaps the

greatest of all, and the most neglected, and one in which the medical profession should lead the way.

UNGOVERNED LUST.

The development and transmission of debased somatic cells lies back of, or leads to, all forms of physical, mental and moral degeneration. It has been said that "the man is in the boy," but the boy was in the protoplasm from which he developed. The disease and debasement of alcoholism are apparent, but who shall measure the degeneracy of our unbridled animalisms? Great and far reaching as are other hindrances to evolution, no other factor in the life of man has so debased humanity, and held it back to its animalisms, as lust, which lays at the foundation of life. It begins in the reproductive protoplasm differentiated in degenerated sexual organs, in a weakened manhood, often developed and perpetuated by habits commenced long before children understand the meaning of sex. Because this is a delicate subject to discuss, and through fear that enlightenment may prove suggestive rather than preventive or corrective, and because the vice is so secret that it is difficult of detection, parents, teachers and physicians have, as a rule, largely remained silent, or wholly ignored it. No subject that involves the uplift of humanity is too delicate to be avoided. We do not hesitate to consider all others that involve the evolution of the race, and no other, in its debasement and boundless reach, ia of great importance.

How early, an unhallowed sexual education begins it is difficult to know. Nurses, to quiet infants under their care have titulated their sexual organs. Parents, thinking children do not know the difference in sex have put boys and girls in the same bed, where through instinct or the suggestion of those who are older, they begin to cultivate sexual passion. Much more common is the debasement of self-pollution, taught by older to younger children, before either comprehend its meaning, while both know enough to conceal the practice. This vile and disgusting habit, more common among boys than girls, but too common with both, so weakens the will, and dominates self-control, though oft and again, its victims solemnly pledge themselves and their God that they will reform, they break all resolutions, and "like the sow that was washed return to the wallow." So persistent does the habit become, so weak the will power, that if consulted, the physician often says, "tie his hands behind him."

The base gratification of lust being a secret vice, it is difficult to

measure its extent, but everywhere, through all ages, enough has been revealed to guide judgment. In 1848-9 I attended a post-graduate course in Philadelphia and heard Prof. Chapman, who saw so much of licentiousness in his specialty, say to his class "There is no such thing as virtue. It is a myth." While I do not agree with him, I do not wonder that he lost faith in chastity.

Unbridled lust has held back evolution all down the ages. Everywhere it has been the sin of humanity. It fills all history. In slavery days in America, its reign was marked throughout the south. On plantations and in cities mullatoes and quadroons abounded. Then, as now, a colored man known to have had connection with a white woman was hung or shot, while for a white man to co-habit with a negress was considered a small offense. The faded color told the race of the sires of thousands of slaves. Mormonism, and the Turk with his harem and his heaven a harem, are examples of lust that will not be satisfied with monogenesis. Both, however, are improvements on the lusts of slavery, for they care for and educate their children, while it begat chattles and sold them into perpetual bondage. But with all alike if they inherit the cultivated weakness of their sires, their descent is imbruted. History, sacred and profane, is filled with their details, from the unhallowed embrace of Bethsheba by the poet King of Israel, who to conceal his crime commanded "Set ye Uriah in the forefront of the battle and retire ye, that he may be smitten and die." Came Solomon and it took 900 wives and concubines to satisfy his lusts. How many descendants he had from all of these wives, history has not recorded. Very likely Corporal Trims complaint against the town bull was often true in his case. But whatever his descent, with all his wisdom, his son, and his son's son, who ascended the throne of David were first class fools. Alas! Libertinism did not die with them, or with slavery, in all lands it still survives and too often, at best, uses the marriage bed for the beastly indulgence of a passion given for the pro-creation of a nobler offspring, whose physical organism should be the fit habitation of an immortal spirit. Such a life begets not only a deteriorated offspring, but fortunately or unfortunately, limits its number.

In a recent paper by Dr. Shrady, published in the *Medical Record*, he says "Motherhood is becoming obsolete in this country."

The first generation of Americans after the colonization of New England had families of ten or twelve; the second, third and fourth generations had families of six or seven; the fifth, families of four and five, and the sixth, families of three or less. The result is, that

275 years after the landing of the Pilgrims the stronghold of Puritanism is not upheld by the ever declining American, but by the Irish, German and French Canadian. If the birth rate had been at its earlier rate, and there had been no foreign immigration at all, Mr. Watson computes that there would have been 100,000,000 people in the United States today. There are only 76,000,000, even when all the negroes and foreign immigrants are included. For this degradation, the doctor assigns as the chief cause, "The woman of this country whose ancestors were born here, is generally averse to bearing children. She is, as a rule, of fragile make, nervous temperament, and far more intellectual than are women of other nations, but with her growth of brain power, she has declined in physique, and maternity with her, is an ordeal to be dreaded, and averted if possible. Thus, it probablyhappens that the birth rate among native born Americans, is continually decreasing."

Doctor Shrady very properly says, "Thus it *probably* happens," but far more probably from the fact that co-habitation is largely for the gratification of lust, and not for the pro-creation of offspring with a nobler evolution. Studying how not to pro-create, and by the use of preventives and abortives, evolution is prevented in the children that escape, and the health of the mother often ruined forever. Our mothers who helped subdue the forests of America had not only a healthfulness, but a moral and physical courage, that is exceptional in the present generation of American women. Life must be protected at its origin; the somatic cells from which it springs, possess inherent power to transmit ancestral strength or weakness. In ages past, progress was chiefly the survival of the fittest, strength, speed, courage, being the chief factors. When development had progressed until directed by an indwelling spirit-life, capable of controlling the re-productive functions, and all other animalisms, evolution should outstrip all preceding ages, but it has not always done so. Emerson once said of one of Earth's intellectural giants, "All the drops of his blood have eyes that look downward." Alas! too true of many of a race whose eyes should ever look upward. Mark said of the Master, when He was out on the mountain fasting, "He was with the wild beasts, and the angels ministered unto Him." When man yields to his appetites, passions, lusts, the drops of his blood look downward, when he controls these "wild beasts" there will be ministering angels and an improved posterity.

It is a law of all life, and of all the organs of the body, each being an aggregation of differentiated lives of like function, that development is in line with their activities. Healthful and progressive de-

velopment from healthful activities, and retrogressive or mal-development, in form or function, from improper use. The differentiation of the reproductive cells is the result of the combined activity of the whole organism, and to this end organisms are created. While they transmit the characteristics of every part, their production is the special function of the organs of generation, and while almost all parts of the body are under the control of the will, and the direction of the nervous system, this is markedly true of them. If the will is persistently weakened through unhallowed lust, it may become practically nil. Through the constant gratification of his lusts, man sinks below the level of the beasts, for he uses his intellect to make provision for their gratification. The erotic passion in all life below him, is indulged for the purposa of pro-creation, and sexual connection is only permitted by the female, when it is possible. With man it is often far otherwise. The intelligent breeder is careful about the mating of domestic animals. Man, is not unfrequently governed by fashion, fancy, title, money, lust, especially lust. Whatever welcome awaits the newborn babe, however strong the parental love and great the care for its future development, it is blood of their blood, and inheritor of the depravities, they have nourished. Man, must not only show his regard for posterity, by providing for its development after birth, but must place himself in harmony with evolutionary forces by proper mating, and the subordination of sexual life to this highest function of humanity.

The creation of a speck of protoplasm endowed with power of recreation and evolution, the prophecy of a life through which spirit acts was more protentious than the creation of all the worlds in infinite space, and however grand the life of man, it has no sacrament more sacred, or of greater import, than the re-creation of a life, that may possess the stored forces of all the past, and transmits them, improved, not impoverished, to posterity; a life born to honor and renown, or to degredation and debasement, and the sacredness increases with each progressive step in humanity. Self conscious personality was evolved not that man might live for himself alone, or for his age, but that through a transmitted and transmuted organism he might uplift humanity. In no other way can he more fully "Glorify God and enjoy him forever." If since his evolution, man had controlled his lusts in the interests of humanity, he would long since have eliminated most of the disease, sin and crime, with which he is burdened, and we can scarce imagine his intellectual and moral status. While we cannot undo the errors of the past, and while we realize more and more fully, our duty to the present in

prevention, protection and education, for those born into the world, as an old time friend of mine, a Scotch professor was wont to say of dull students "Ye canna mak a mon o' mud." The climax of the work of the Creator was the creation of man, the climax of the life of man is his re-creation. The world has a habit of calling mesalliances, made for social position, for money, or the beastly gratification of lust, by the sacred name of the most ennobling attribute of the human heart—Love. Hogs and dogs have lust. Love is a sentiment of the soul. It is the most tender, beautiful and exalted manifestation of human life. It rejoices in another's joy; it is thrilled by another's aspiration and exaltion. Love is spiritual, lust is carnal. One is a prophecy of what man may become. The other holds him back to what he was. One of the greatest among mortals, has said, "There is a law in my members, warring against the law of spirit, and bringing it into subjection to the law of my body. This is a sin." Sexual love has in it, the element of carnality, implanted for the procreation of the race, but the spirit is given that it may be controlled in the interest of race evolution. To this end, those who minister to the body, must work in harmony with those who minister to the spirit, which while connected with the body, acts through its instrumentality, but aspires to higher than animal enjoyment. There has been much discussion about teaching religion in the public schools. Education must give the mastery over carnal appetites and passions, with the power to use every animal function for its development, power to make the whole material universe minister to its growth. It must awaken the mind to the perception, reception and appreciation of truth. To develop the intellectual forces and leave the moral nature debased, and the animal master, is to endow vice with power. Education must be for God and humanity.

Civil law recognizes that man in his degeneracy, fills the world with incorrigibles, derelects, disgraceful to humanity, dangerous to society, and hurtful to evolution, and it restrains his liberty. What can the medical profession do to prevent their creation? It would be well if physicians to all prisons and reformatories would make a a careful study of the underlying causes that brought the inmates under their care, not stopping with intemperance and unfortunate environment, but going back to the beginning; and it will hardly require a prophet's ken to predict that unbridled lust hereditary or acquired, was the direct or remote cause of most of the imbecility, insanity and crime that debase humanity. Prof. Starr, of the University of Chicago, says, "one in every hundred of English birth. and highest civilization, becomes a lunatic."

We have suggested as preventive, the proper mating of mankind, self-denial, purity of thought and life, making reproduction a holy sacrament; and the habits formed in early life leading to licentiousness, well nigh incurable when fully developed, and at best, leading to an undesirable offspring, should be prevented by the constant care and watchfulness of parents and guardians, which can not begin too early. They should see that the boy does not sleep on his back, in which position the bladder presses upon and irritates the vesiculæ seminales, that the bladder is emptied before retiring, that he has a proper bedfellow, retiring and rising with him, and that he is kept as much as may be in good company. As the habit often commences in early life, it may sometime be hard to tell what association is proper, but it is easy to know what is improper. Judicious and timely instruction should not be omitted. Circumcision has been recommended as preventive, but the history of Judaism is unclean. When the habit is fully formed it dominates the whole life, if not by masturbation, through other sexual sins not less gross. The only effectual remedy is to rebuild a lost will power, and this is more than making something out of nothing, for we must overcome evil before it can be replaced with good. Children should be kept as much as possible ignorant of sexual differences. Lustful thoughts and licentious books, with even hidden suggestions, often found where least expected, should be avoided as physical and moral poisons. The daily paper has become a fountain of foulness with its minute detail of all manner of debasement, and is hardly fit for any home, and even home magazines are sometimes Shakespearian in their suggestions. For example "*Camp & Plant*" a weekly journal on sociology, contains in a single issue "Wasn't that a silly thing to do," and "Certain maxims of Halifax?" To nurse foul thought is to invite it to mastery. To be pure in body we must be pure in mind. Farly marriage has been recommended as a proper preventive, but it is too much to ask any woman to wed an imbruted derelict, who would make the marriage bed one of grossest lust, and burden the world with a deteriorated manhood.

Treatment, is an opprobium medicini. Of course quacks and patent nostrums promise abundant cures. "Fools rush in where angels fear to tread." In a recent sermon on divorce, Cardinal Gibbons said "There is a social scourge more blighting, and more destructive of family life than Mormonism." Divorce and polygamy are alike evidence of a reign of lust. In all higher civilizations, monogenesis is the law, and husband, wife and children should make a sacred trinity and home an earthly paradise and the founda-

tion of states that will protect and uplift humanity. But the home too often falls far below its idealization. The physician who goes behind the scenes, and keeps its secrets, knows that divorce furnishes scarce half the record.

Intemperance is the curse of many homes, but it usually has as its associate unbridled lust, which stands first as a hindrance to evolution. The most brilliant imagination will fail to picture the lives born to debasement and mediocracy, that ought to have reached Homeric heights. Ever and anon down the pathway of life, reproductive cells have escaped ancestral sins and a Job, an Isaiah, a Plato, and a Socrates, a Paul and a Christ, an Esther and a Victoria have shown what manhood may be, should be.

The great question for us to solve is how can this source of human degeneracy be arrested, and human evolution be promoted and protected, and approximate perfection attained? Physicians in the interest of humanity have in many instances, traced the nidus of disease to its sources, and sounded the alarm to their patrons and the public. By patient pleading they have had laws enacted in the interest of health and humanity, too often made useless by politicians catering to medical sects, the caudal extremities of the profession, giving them control on all health boards, and so as the politician expresses it, making the "tail wag the dog," and the laws practically useless.

How many physicians have raised a warning note against the great sin and crime that holds back physical, intellectual and moral evolution? When all has been done that can be done, and man has descended to the level of the brute, and committed crimes clearly the outgrowth of his ungoverned animalisms, often an erotomania, as in the case at Hamilton, Ohio, where the brute Knapp assaulted and strangled numerous wives, women and little girls, there is a a remedy that is logical, humane and reformatory, sure and safe, and far more righteous than to electrocute, or burn at the stake by mob law.

To prevent other morbid conditions we remove the cause; why not do the same here? Among civilized nations the purpose of law is the protection of society and the reformation of the criminal. Unsex the erotic brute, and there will be no repetition of seduction, adultery or rape, by him, or the crimes growing out of ungoverned sexual passions, and no perpetuation through him of this criminal class; while the warning to those who live for the gratification of lust will be more potent than penitentiaries or the gallows. And why not? I know of no reason, and unless it may be that some law-

maker may fear the remedy may be applied to him. To arrest degenerative processes in organs hidden away in the abdominal cavity of woman, she has been unsexed without scruple. The allied organs in man, easy of access, have often enfeebled his will, destroyed his moral sense, dominated his life, visited the iniquities of the fathers upon their children, arrested evolution, and been the potent factors of all manner of disease, vice and crime, and yet they are held sacred.

It may be urged that it will convert men into useless drones. Better that, than permit them to go about, "like a roaring lion, seeking whom they may devour," filling the world with their kind. But castration turns the vicious horse and the dangerous bull into the useful gelding and the patient ox, and the gelding often wins the the race for speed and endurance, and the ox improves in usefulness and longevity. Castration in man, has at least the approval of the great Physician. We read in the record of His life, "And the Pharisees came to Him tempting Him, and saying, Is it lawful for a man to put away his wife for any cause? And He answered them, Have ye not read, that He, who made them in the beginning made them male and female?"

"And they said, Why did Moses command a writ of divorcement?

"I say to you that whosoever shall put away his wife, except it be for fornication, and shall marry another, committeth adultery. And his disciples say unto Him, If this is the case, it is not good to marry.

"And He said unto them, There are some eunuchs which were so born; and there are some eunuchs which were made eunuchs; and there are some eunuchs which have made themselves eunuchs for the kingdom of heaven's sake."

And the record shows that eunuchs are not necessarily ciphers. "Behold a man of Ethopia, an eunuch of great authority, under Candice, Queen of Ethiopia, who had charge of all her treasure and had come to Jerusalem to worship."

That misguided and ungoverned lust dominates mankind more than any other evil, and that it has been the potent factor of unmeasured diseases, manifold and transmissible, of unnumbered crimes, and the great hindrance to the evolution of a better manhood, is too evident to require argument. Whilst prevention and remedy are difficult, they emphasize the importance of a more thorough investigation, and demonstrate the necessity of laws that will more positively restrain this class of degenerates through the application of the only efficient remedy. To those who have been convicted of

such grave crimes as incest, seduction, criminal abortion, adultery, rape and murder, sequents of unbridled lust, for whose punishment we have scarce questioned the righteousness of imprisonment and the gallows, the remedy is simple, safe and sure, and will secure the protection and uplift of society.

Evolution has revealed to the world an infinite and eternal energy, as Herbert Spencer has called it, existing in all His works, that looks forward and upward forever, and books no violation of its laws, and as far as we know humanity is its highest expression. The higher life of man demands all its opportunities and possibilities and the suppression or removal of all that retards, debases, or degrades. It is ours, to put ourselves in line with this evolutionary force, and by what means we may help it forward to its grandest achievements, its noblest results.

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*THE EYE IN GENERAL DISEASES.

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The intimate relations existing between the brain, nervous, blood and lymphatic systems, and the eye renders the latter organ subject to the same diseases. The delicate structure of the two inner tunics of the eye, with their rich supply of blood vessels and nerves favors the eye, as a situation for lesions, in connection with disease of the systems mentioned. The blood supply to the fundus of the eye is derived from the internal carotid and from the whole circle of Willis.

The inner coats of the eye contain motor, sensory and sympathetic nerves and ganglia.

"The membranes covering the optic nerve pass directly into the cerebral meninges, at the optic foramen, to whose upper wall the nerve is quite firmly adherent. Hence the subdural and sub-urachnoid spaces of the optic nerve communicate with the corresponding ones within the skull.

"The lymphatics in the brain are mainly perivascular and accompanying the veins. They leave the skull through the carotid canal, the jugular foramen, and with the vertebral artery to the upper deep cervical glands. The outflow of lymph in the subarachnoid

*Read before the Annual Meeting of the State Society at Topeka, May, 1904.

and subdural spaces of the optic nerve and the current of lymph in the nerve appear to be directed toward the crainal cavity. If an injection is made, under moderate pressure, into the tissue of the nerve in a direction toward the crainal cavity, the fluid does not pass beyond the chiasma into the tractus, but transversely across the anterior half of the chiasma to the otheroptic nerve, along which it runs in the same way as if it were directly injected in a centrifugal direction. The injected fluid extends furthest forward in the axial bundles of the second optic nerve."

This explains the fact that inflammatory processes, whether infectious or non-infectious, may spread from one eye to the other without giving rise to notable cerebral symptoms. This is true, not alone of so-called sympathetic ophthalmia but also of an entire series of inflammatory affections, especially of the choroid. The lymphatics of the orbit connected with Tenon's capsule empty mainly into the deep glands of the face. The lymphatics of the lids and conjunctiva pass into the glands in front of the ear and below the inferior maxilla.

In studying these anatomical facts, it can be seen why the eye is seldom the starting point of a general disease, but that certain classes of general diseases affect the eye. Again the character of a brain lesion is more often determined by the appearance of the eye than its location. Hyperæmia or anæmia of the brain is not necessarily accompanied by hyperæmia or anæmia of the fundus of the eye.

Numerous ophthalmoscopic examinations of the insane shows no constant findings, evidently due to the semi-anatomical independence of the eye.

Nevertheless the physician is often helped to diagnose a general disease and determine the treatment by the opthalmoscopic findings. An eye lesion is sometimes the first notice a patient has of Bright's disease, diabetes or some form of nephritis or heart lesion. Not because the condition could not have been found out by some other means but from the nature of the disease not causing the patient but little or any great discomfort. When these eye lesions appear the general disease is well advanced and often proves fatal. Hemorrhage of the retina, due to Bright's disease, is an indication of dissolution. An examination of the urine should always be made in case of cataract. One-sixth of diabetic patients have cataract. Such cases are operated on when the patients are in fair physical condition, but the prognosis for success should be guarded and there is great danger of panophthalmitis with subsequent enucleation of the eye.

A general disease cannot be named with certainty, from the appearance of the lesion of the eye. For example, there are ruptured retinal vessels, hemorrhage in the retina, with tortuous blood vessels, some exudation in the vitreous, etc. It cannot be said definitely, This is a case of diabetes or albuminuria, or heart lesion or nephritis, but it does point to a serious trouble in the circulatory system. There is a choked, woolly disc, optic neuritis. Is it caused by syphilis, la grippe or wood alcohol?

Syphilis stands at the head of the list in causing disease of the internal coats of the eye.

Better results are obtained in the treatment of syphilitic eye diseases than eye lesions from any other general disease. When the iris is inflamed suspect syphilis. When the uveal tract is involved suspect syphilis. When you have some obscure eye trouble with failure of sight, suspect syphilis;examine the urine, if negative, use atropine locally, K. I. internally and get results.

The eye symptoms in brain and cord lesions are legion.

Eye lesions from trauma of the skull and brain are numerous. Many of these symptoms or conditions of the eye are transitory and misleading. The permanency of an eye lesion, from disease of the brain or cord or from trauma, determines its seat of origin.

These dogmatical remarks have been made to open discussion; to claim that the eye is a means or help in diagnosing many general and some specific diseases; that where the uveal tract, retina or optic nerve or mediæ of the eye is involved it is imperative for the physician to make an exhaustive and thorough examination of his patient. This examination must include, if need be, the whole man, his excretions, secretions and fluids.

DISCUSSION.

DR. ALKIRE:—I don't see that the doctor has left very much for us to find fault with or criticise, if anything at all. I was very much pleased with the paper for this reason, it is an effort to impress upon the minds of those present who do not already thoroughly understand it, that the eye is not an independent organ, that it is not a little optical apparatus all to itself, but that it is a part of the body just as much as any other organ of the body, and that it is subject to disease through the influence of diseased conditions in other parts of the body. This is a point which I believe that specialists are inclined to ofttimes overlook or disregard, and consequently place too little dependence upon the general medication of the patient. On the other hand, the general practitioner does not place enough dependence upon diseases of the eye as related to other parts of the body.

DR. MINNEY—Another point that I wanted to get at is a great deal of old straw is threshed over in the effort to reach a point, which is neither interesting nor edifying, and if we can boil a thing down, and give a few original thoughts, it is more acceptable and much more is accomplished. In the treatment of the eye we find that we use a great deal of medicine. Some don't believe in medicine. I do, in its place. The general practitioner uses it, and so must the specialist. If we neglect the internal medication, we fail. For instance, we have a case of neuralgia, regular old "brow ague." The location of the pain is in the eye. Quinine, and plenty of it, relieves the case. And where we suspect syphilis, and this is probably the cause in the majority of cases where the deeper structures are involved, our anti-syphilitic systemic treatment is indicated. This disease is increasing at such an alarming rate that the American Medical Association is taking action in the matter to see what can be done to better the existing state of affairs. Yet we find that there is no disease which yields so readily to treatment as syphilis. I got the impression when I first started out, I got it from the far east and they are not as practical as we are now, that we could definitely locate and diagnose certain diseases by the use of the ophthamoscope. I find it a great help, the same as you use a fever thermometer or test the urine; so the ophthalmoscope is a great help to us in making up a diagnosis. However, I know of no general disease of which we can say that it is thus and so, simply from the eye, nevertheless, it is a great aid to us in diagnosis.

Dr. Charles E. Elliott died at Wellington, aged 70, on October 8. He was a graduate of the Cleveland College in 1869.

"A KANSAN AS PLAGIARIST."

The quotation from *The Texas Medical Journal* under the above caption in our last issue brought us from Dr. William B. Dewees of Salina, a threat of a libel suit unless we should print his answer,—in spite of the fact that we had not mentioned his name. Now, we wish to be perfectly fair, and besides, your editor does not receive salary enough to pay counsel in a libel suit. Therefore we publish the pertinent part of said "answer" (which is in a printed double column 2½ pages long.)

After noting the fact that he had written Dr. Daniel threatening him with a libel suit unless he retracted his statements (quoted in our last issue) and stating that Dr. Daniel had paid no attention to

his threat, Dr. Dewees reproduces an affidavit from a Mr. T. A. Cordry, editor of *The Salina Evening Journal* to the effect that the latter had Dr. Dewees' manuscript in his possession before March 24, 1904, and that he delivered the printed pamphlet before April 30, 1904. [Dr. Daniel read his paper from printed slips before a medical society on April 27 and published it in the May issue of his journal. Dr. Daniel says that he received Dr. Dewees' pamphlet, July 10, 1904.] Dr. Dewees then goes on to say:

"Take the foregoing affidavit which establishes the fact that my paper was published about the middle of April, and the further fact that the Daniel paper was not published until about the middle of May, the fair-minded reader will see the utter impossibility of my using any of the last named paper, but that the opportunity was given for Daniel to use whatever he chose of my paper. I shall leave it to the reader to judge as to who is the most likely to be the plagiarist.

"A word in answer to the wrathy comment of this Texas Wonder upon the typographical error in my paper. By this comment is evidenced that this most wonderful Daniel is a sciolist. For, indeed, a small school boy or a printer's apprentice has the knowledge in syntax to know that what is said about Anne Boleyn in my paper is placed between dashes which puts it only as an interpolation, and in no wise or manner as a part of the sentence referred to Tamora, the queen of the Goths, the Empress at the Roman Court, and Aaron, her black paramour.

"This erroneous interpolation was not noticed until the first one hundred or so of the edition of the pamphlet of my paper were mailed, after which every copy was carefully marked in red ink correcting this error, before mailing it. Daniel having received a copy of the first mailing must have had it in his possession before the 20th of April, which allowed ample time for making use of my paper since he read his paper on April 27. It is not for me to say that he did so, but let it suffice to say that by his action in writing and publishing the said libelous editorial he has shown beyond all doubt or cavil how great an ass an old fool can make of himself.

'Well, heaven forgive us all?
Some rise by sin, and some by virtue fall.'

Salina, Kansas, October 10, 1904. WILLIAM B. DEWEES."

Whether this answer convinces or not is of small concern to us; we have aired the charge of flagrant plagiarism and the reading public must act as jury. Dr. Dewees' explanation of his literary reference is very interesting and instructive. A more important matter however, and one to further which each of the contestants in this case will yield his claims of priority, is the subject touched on in the two pamphlets. We wish that our readers would run through Dr. Schenck's paper on the general subject of sexual morality in this issue and note his recommendations. Wouldn't it be better if the criminal were castrated? Can we as physicians really accomplish something in promoting the solutiou of this problem of sexual hygiene?

Dr. W. E. Buck of Pueblo, Colo., spent a few days with old friends among the doctors of Kansas City, Kansas, this month.

THE SUPPRESSION OF TUBERCULOSIS.*

Professor von Behring, of the University of Marburg, delivered an address on this subject before the annual meeting of the Naturforscher in 1903, at Cassel. In it he made some important statements now rendered accessible to the American reader by Dr. Bolduan's translation. Some of these statements are:

(1.) Tuberculosis Pulmonum is seldom if ever acquired by the inhalation of bacilli or by the direct infection of the lungs. On the other hand a partial intoxication precedes such infection and the lungs are infected secondarily to other tissues.

(2.) The most important source of infection is the diet of the new born. This is true because the digestive tube in the new born lacks that development of the epithelium which makes it act as a dializing membrane. On the contrary the epithelium in the infant is only a poor filter and bacilli pass easily into the blood from the intestine. Circulating in the blood the bacilli gradually intoxicate the tissues, and unless the vigor of the body is fully maintained, an infection of the lungs follows.

"Recognizing the significance of the presence of Koch's bacillus and applying all other known methods for the identification of tuberculosis, Dr. Naegeli of Zurich, working under the direction of Prof. Ribbert, was unable to discover at autopsy a single body over thirty year old in which there were not some signs of the occurrence of a tubercular infection. Between the ages of 18 and 30 there were 96 per cent.; between 14 and 18, 50 per cent.; between 5 and 14, 33 per cent.; and between 1 and 5 years, 17 per cent., which showed the presence of tubercular lesions. In the bodies of infants under one year, on the other hand, definite tubercular lesions were invariably absent." Hence, since all of us who are adults are tubercular, it is impossible to segregate the disease. Thus the foolishness of trying to forbid the use of public conveyances to the tubercular!

The book deserves reading, especially here in Kansas, where the climate is so severe on the respiratory tract. HOXIE.

*THE SUPPRESSION OF TUBERCULOSIS, by PROFESSOR E. von BEHRING, University of Marburg, translated by Dr. Charles Bolduan of Brooklyn, N. Y., New York, 1904, John Wiley & Sons, pubs. 12 mo., VI. 85 pages. Cloth, $1.00.

Dr. Charles H. Crooks of Wyandotte county, is on the way to Lakawn, Laos, Siam, where he expects to practice for a few years.

LIQUIOZONE.

OCTOBER 12, 1904.

To the Secretary Douglas County Medical Society, Lawrence, Kas:

DEAR SIR:—At the request of your society, I have made an examination of a sample of Liquozone, brought to me by your representative, Dr. E. Smith. The bottle when opened smelled strongly of sulphur dioxide.

The solution contained:	per cent.
Sulphur di-oxide,	0.24 by weight
Sulphuric acid, free and combined	0.76
Total solids, (mineral matter)	0.034

Upon evaporation of about two ounces it gave a teaspoonful of a thick, highly acid solution, which upon being heated still more gave off sulphuric acid in abundance. There was a small quantity of organic matter in the sample as was shown by the blackening of the free sulphuric acid solution when concentrated.

The mineral matter contained some iron oxide, alumina, lime, and soda, combined with sulphuric and hydrochloric acids—about the constituents of ordinary water. A solution similar to Liquozone would be made by passing sulphur dioxide gas into water; if this was exposed to the air, some of the sulphur dioxide would, with the water, form sulphuric acid.

Yours truly,

E. H. S. BAILEY.

Society Fees—Our Treasurer should no longer have to collect the membership dues from any except our component societies. In other words he keeps books not with the individual members but with the local societies. Each society is assessed two dollars for each member reported. Secretaries of local societies should see that their reports tally with the treasurer's receipts. No one should now be able to get into our society except through membership in his county society. If there is no county society then he should organize one.

Malpractice Suits—Now that our State Society is becoming strong and financially able, why would it not be in order for it to undertake the defense of any members who may be brought into the courts for malpractice? Why need we pay an extra fee to some insurance company for this service? New York State has tried this plan successfully.

School of Medicine—Do the readers of this JOURNAL, who are of course the best physicians of this state believe that it would be for the best interest of our profession to establish a full medical school in connection with our State University? Let us hear what is really thought by the physicians of Kansas.

Drug Counterfeiting—In New York an immense trade in counterfeit drugs has just been run to earth and the promoters arrested, operated chiefly under the name of The Globe Drug Co. The drugs were not imitations but counterfeits. The principal drugs involved are:

AA—Aspirine "Schleirin" 1 oz. envelopes.
SS—Lactophenin "Schleirin" 1 oz. cartons.
O—Thiocol "Scheirin," 1 oz. bottles.
U—Aristol "Bayer," oz. cartons, (see Thymodol-Bayer and iodothymol.)
Q—Benzosol "Hoff. La Roche," 1 oz. envelopes.
T—Creosote Carb, "Von Heyden," 1 oz., 4 oz., 8 oz., and 16 oz. bottles.
V—Chloralamid "Schering," 1 oz. cartons.
P—Duotal "Von Heyden," oz. envelope or bottle.
PP—Guaiacol Carbonate "Hoff, La Roche," 1 oz. envelopes.
G—Iodothymol, (Aristol,) 1 oz. bottles.
R—Ichthyol "Ichthyol Co.," 1 lb. tins.
X—Orphol "Von Heyden," 1 oz. bottles.
F—Paracetphenetidine "Merck's," (Phenacetine,) lb. cartons.
FM—Paracetphenetidine "Merck," 1 oz. cartons.
A—Phenacetine "Bayer," oz. cartons.
B—Phenacetine "Bayer," lb. cartons.
FF—Phenacetine "Riedel" 1 lb. cartons.
W—Salipyrine "Hoffman La Roche," 1 oz. cartons.
E—Salol "Merck or Von Heyden," 1 lb. cartons.
C—Sulphonal "Bayer," 1 oz., 2 oz., 8 oz., and 16 oz. cartons.
Z—Salophen "Bayer," 1 oz. cartons.
D—Trional "Bayer," 1 oz., 2 oz., 4 oz., 8 oz., and 16 oz. cartons.
DD—Trioline (Trional,) 1 oz. cartons.
DDD—Trional, (Methylsulfonal,) "Hoffman, La Roche," 1 oz. cartons.
H—Thymodol-Bayer, (Aristol,) 1 oz. cartons.
Y—Tannalbin "Hoffman, La Roche," 1 oz. cartons.
S—Urotropin "Merck," (Formin,) 1 oz. bottles.

Dr. J. L. Myers, formerly of Kansas, writes from Alaska that tuberculosis and syphilis is very prevalent among the tribes and that the death rate there is considerable.

Dr. Charles F. Ensign and bride of Oakland, Kansas, are on the road to their future home in China. The doctor's address for the next few years is Ta An Fu, China, a town of 50,000 population.

Bibliography—Those who wish to have the literature examined for references on medical topics can obtain such help from the Medical Institute of Bibliography and Bureau of Translations at 103 State St., Chicago.

Membership in the State Society costs your county society two dollars a year. If your county society needs seventy-cents a year to run it then your total society dues would be $2.75. There is no longer an entrance fee or initiation account.

The following physicians through their membership in the State Society have joined the American Medical Association during the last month: Doctors A. J. Mulvane of Topeka, G. K. Purves of Wichita, M. A. Brawley of Frankfort, J. S. Cummings of Bronson, G. W. Hallonbeak of Cimarron, Charles B. Leslie of Meade, M. S. McCreight of Oskaloosa, G. W. Main of Overbrook, J. A. McCammon of Reamsville, O. P. McPherson of Great Bend, Benjamin Skinner of Wetmore, C. J. Simmons of Lawrence, C. C. Stillman of Morganville, G. A. Tull of Clay Center.

SOCIETY NEWS.

Golden Belt Medical Society—The third quarterly meeting of the Golden Belt Medical Society was held in the Masonic Temple at Salina, Kansas, Thursday, Oct. 6, 1904, with President W. S. Lindsay in the chair.

The routine business of the meeting was transacted and Doctors F. K. Meade of Plainsville, Geo. Seitz, O. R. Brittian and Wm. B. Dewees of Salina, Kansas, J. M. Deiter and Chas. B. Buck of Abilene, and A. G. Henderson of Leonardsville, were elected to active membership.

The resignation of Secretary A. A Shelley of Abilene, was read and accepted. L. Leverich of Solomon, Kansas, was elected to fill the vacancy.

Doctors Harvey, Curtis and Hazlett were appointed to draft resolutions on the death of the late Dr. Philander Daugherty, of Junction City, Kansas.

Section 3 of Article 2, of the By-Laws, was changed to read: The active members of this society shall consist of residents of the State of Kansas, who are eligible to membership in the American Medical Association, and who live in accordance with the Code of Ethics of the American Medical Association.

The proposition of the State Medical Society, to become the fifth district society, was, after due consideration, unanimously declined. The following scientific papers were read and elicited prolonged discussion:

The right to life of the unborn child—Dr. E. L. Simonton, Wamego, Kansas.

Treatment of mal-positions of the uterus and their effects—Dr. T. R. Conklin, Abilene, Kansas.

Report of a case of lymphadenoma treated by X-Ray—Dr. J H. Winterbotham, Salina, Kansas.

A case, personal—Dr. J. T. Curtis, Dwight, Kansas.

Intestinal union by the aid of a hollow candle-stick—Dr. J. D. Riddell, Enterprise, Kansas.

Those present were: Doctors Lindsay, Curtis, Riddell, Moses, Crawford, Fowler, Harvey, Gaines, O'Brien, Leverich, Conklin, Alkire, Buck, Lagerstrom, Winterbotham, Shenck, Henderson, Vermillion, Brittian, Simonton, Need, Elmore, Pickerel, Bruner, Hazlett, Toby, Nordstrom, Ketchersid, Neptune, Klingberg, Hayes, DeWees, Meade, Seitz, Deiter and three visitors, Tuttle, Brown and Holinquist, thirty-eight in all.

Invitations were received from Lincoln, McPherson and Hope, for the next place of meeting, Thursday, January 5, 1905. A vote was taken and Hope, Kansas, selected.

After adjournment all were invited to Banquet Hall, where all the delicacies of the season had been prepared by the physicians of Salina.

L. LEVERICH,
Secretary.

[EDITOR'S NOTE.—In view of the above action of the Golden Belt Society in separating itself from the State Society, its members are no longer eligible, through their membership in the Golden Belt Society, for membership in the American Medical Association; nor are they entitled to receive this JOURNAL at the expense of the State Society. We invite their subscriptions to the JOURNAL.]

Harvey County Society—The Harvey County Medical Society met Monday evening, Oct. 3, in the office of Dr. L. T. Smith with Dr. Smolt, president of the society, presiding. Others

present were: Drs. Smith, Graybill, Bennett, Axtell, Cooper and Abbey. After routine business Dr. Axtell read a paper on Puerperal Infection. The prophylaxis of thecases by rigid asepsis was strongly insisted upon rather than the extensive use of poisonous antiseptics. The varieties of infection, and the channels through which they are conveyed, and the clinical aspects of each kind of infection were treated. A lively, general discussion followed the reading of the paper. Dr. L. T. Smith treated the members to an enjoyable supper, nicely served. The social element of these meetings has become a prominent feature that seems to be much appreciated by the members. The next meeting will be Monday, Nov. 7.

Fourth District—The fourth district is progressing slowly. We have three county societies in the district, Harvey, Butler and Reno counties. Harvey county has adopted the constitution and by-laws recommended by the state association and Butler county has taken steps to do so at their meeting in January 1905. I visited their society on the 13th of this month and found a good live work in progress, they had two fine papers which were generally discussed. These societies are doing fine work in cementing the profession and when we get societies in every county in the state the profession will have a different standing and it will be to the betterment of the state.

I have the names of the physicians of the following counties: Chase, Kingman, Pratt, McPherson and Marion. I have received replies to all my letters to physicians asking for a list of physicians of their county, except one, but have written to several county clerks for the list and received no reply. I expect to organize society next month in Barber, Pratt, Kingman, Marion and possibly Sedgwick counties. I have received encouraging letters from two counties only, the others have been very discouraging and will take considerable missionary work.

I have visited the Harvey County Society and the South Kansas Medical Society, the latter at their meeting last Wednesday and gave them a short talk on medical organization and there seemed to be quite an interest manifested towards general organization.

O. J. FURST,
Councillor.

SOUTH KANSAS SOCIETY—The society met in Wichita October 18 and 19. A good time is reported. The program follows:

Clinic—Hemiplegia—St. Francis Hospital—Archibald Church,

Professor Nervous and Mental Diseases, Northwestern University Medical School, Chicago.

Relative mortality—Pres. W. H. Graves, Dodge City.

Chronic cystitis and hypertrophy of prostate treated by electricity—G. A. Boyle, Enid, Okla.

Diabetes mellitus—S. M. Palmer, Florence.

Fibroids complicated by pregnancy—D. W. Basham, Wichita.

Tubercular meningitis—R. S. Haury, Mound Ridge.

Present status of surgery of stomach and duodenum—C. E. Bowers, Wichita.

Surgical clinic, St. Francis Hospital.

Puerperal infection—J. T. Axtell, Newton.

The new born infant—W. H. Carter, Atlanta.

Medical organization—O. J. Furst, Peabody.

X-Ray in tubercular affections—H. E. Rose, Sterling.

Histology and pathology of cystic degeneration of ovary—A. H. Fabrique, Wichita.

Puerperal eclampsia. F. L. Abbey, Newton.

Why shouid I bring my surgical cases to Wichita?—J. Sippy, Belle Plaine.

Some unusual cases—J. M. Latta, Wichita.

Carcinoma basocellulare—S. C. Emley, Wichita.

First District Society—The fall meeting was held in Lawrence on October 13. Douglas County Society entertained the members and their wives at the Eldridge House from 6 to 7:30. Some thirty out of town physicians were in attendance,—58 in all.

The following program was rendered:

Injuries to the eye—J. W. May, Kansas City, Kansas.
Trachoma—E. P. Pitts, Atchison.
Purulent conjunctivitis—H. L. Alkire, Topeka.
Nasal obstruction—J. E. Sawtelle, Kansas City.
The "anti" serums—L E. Sayre, Lawrence.
[Prof. Sayre's effort to put these sera in the pharmacopeia was endorsed.]
The perineum—J. E. Hunt, Atchison.
Remarks on paresis—C. C. Goddard, Leavenworth.
Discussion of reorganization, led by E. T. Shelly, Leavenworth.

The society decided to continue as present constituted until the next meeting in Kansas City the second Thursday in February. Dr. Goddard's candidacy for the state senate was approved and endorsed.

President Reynolds has visited and organized Brown county with thirteen members. He is enthusiastic over their unity and good spirit.

INTESTINAL ANTISEPTICS.

Within the past five years the importance of a clean, antiseptic prima via has become generally recognized. Today there are few physicians who do not begin their treatment of acute diseases with a "clean out." Many follow the "keep clean" maxim and those who are most thorough in this direction discharge their patients soonest. Out of the numerous apperients and cathartics available magnesium sulphate has come to be recognized as the most acceptible for general use. Abbott's Saline Laxative known and used wherever the English speaking physician practices is unquestionably the favorite preparation of this salt. A later but quite as useful product is Abbott's Salithia, a combination of magnesium sulphate (C. P.) lithium and colchicine. This combination has proved to be the best alkaline-saline for use in rheumatism, gout and all manifestations of the uric acid diathesis. The formula explains why! Salithia and Saline laxative can be used alternately, but in either acute or chronic rheumatism Salithia will prove preferable to the Saline as the combined action of lithium and colchicine is secured uniformly and at once. The less often medicine is given in these prolonged cases the higher the patient's opinion of his doctor.

Salthia may be given in teaspoonful doses once or twice daily or even oftener, the usual method being to order it before breakfast and on retiring at night. If the morning dose be taken in hot water it is more efficacious. In severe acute cases of rheumatism where rapid depletion and elimination is essential Calcalith (Calcium carbonate Comp.) is usually exhibited in conjunction with Salithia and the latter may be given every four hours until the bowels act freely. Salithia is not at all unpleasant to take. It effervesces freely and even children will take it if sweetened slightly. If desirable somewhat stronger solution may be made (two to three teaspoonsful to half a pint of water) this can be sweetened and flavored with a little lemon and taken after effervescence has ceased. Whichever way it is taken Salithia will give prompt and appreciable results and if once used in the treatment of diseases of the uric acid type will not be readily discarded.

For Sale—A Kinraide Coil suitable for a 110 volt direct current. Sold cheap with tube holder, fluoroscope, rheostat, etc. No. 5, JOURNAL office.

Locum Tenens—A graduate in 1903 of Northwestern wants to take charge of a good practice while the owner is away. No. 6 JOURNAL office.

For Sale:—In a good town of 8000 inhabitants in Eastern Kansas, a good paying, well-established practice for a *Specialist in Eye, Ear, Nose and Throat* work. No competition. Good surrounding territory. Office furniture for two rooms, full line of instruments. Operating chair, Davenport, etc. Closest investigation desired.

Address,

SMITH, care JOURNAL OF THE KANSAS MEDICAL SOCIETY,
Lawrence, Kansas.